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(12) **United States Patent**
Weiss et al.

(10) **Patent No.:** US 6,497,872 B1
(b4) **Date of Patent:** Dec. 24, 2002

(54) **NEURAL TRANSPLANTATION USING PROLIFERATED MULTIPOTENT NEURAL STEM CELLS AND THEIR PROGENY**

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(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

(21) Appl. No.: 08/486,313

(22) Filed: Jun. 7, 1995

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A61K 48/00

(52) U.S. Cl. 424/93.1; 424/93.2; 424/93.21

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424/93.21; 514/44

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(57)

ABSTRACT

The invention provides methods of transplanting multipotent neural stem cell progeny to a host by obtaining a population of cells derived from mammalian neural tissue containing at least one multipotent CNS multipotent neural stem cell; culturing the neural stem cell in a culture medium containing one or more growth factors which induce multipotent neural stem cell proliferation; inducing proliferation of the multipotent neural stem cell to produce neural stem cell progeny which includes multipotent neural stem cell progeny cells; and transplanting the multipotent neural stem cell progeny to the host. Also provided are methods of transplanting neural stem cell progeny to a host by obtaining an in vitro cell culture containing CNS neural stem cells where one or more cells in the culture (i) proliferates in a culture medium supplemented with one or more mitogens, (ii) retains the capacity for renewed proliferation, and (iii) maintains the multipotential capacity, under suitable culture conditions, to differentiate into neurons, astrocytes, and oligodendrocytes; and transplanting the one or more cells to the host.